

Dr. Erika Birgit Kaufmann, née Wehefritz

DEPARTMENTS OF MATHEMATICS AND PHYSICS AND ASTRONOMY, PURDUE UNIVERSITY
150 N. UNIVERSITY STREET, WEST LAFAYETTE, IN 47907-2067
PHONE: (765) 494-3173 ◊ FAX: (765) 494-0548 ◊ E-MAIL: EBKAUFMA@PURDUE.EDU
HOMEPAGE: HTTP://WWW.MATH.PURDUE.EDU/~EBKAUFMA

Curriculum vitae

June 2026

Current Positions

- since July 23 Associate Head of Graduate Studies
Department of Mathematics, Purdue University
- since Aug 18 Professor, Purdue University
with a joint appointment in Mathematics (75%) and Physics and Astronomy (25%)

Positions held

- Aug 13–Aug 18 Associate Professor, joint in Math and Physics & Astronomy, Purdue University
- Aug 07–Aug 13 Assistant Professor (tenure-track), joint in Math and Physics & Astro., Purdue
- Spr 16 Visitor at the Max–Planck Institute for Mathematics, Bonn, Germany
- Spr 14 Visitor at the Max–Planck Institute for Mathematics, Bonn, Germany
- Fall 13 Member in the School of Mathematics, IAS, Princeton, NJ
- Sep 10–Dec 10 Visiting Fellow, Physics Department, Princeton University
- Aug 04–Aug 07 Assistant Professor-in-Residence at the University of Connecticut, Dept. of Physics
- Aug 03–May 04 Visiting Assistant Professor at Oklahoma State University, Dept. of Physics
- Sep 02–Aug 03 Post-doctoral fellow, Physics Department, University of Bonn (Germany)
- Sep 99–Jun 02 Post-doctoral fellow at USC, Los Angeles (USA), Dept. of Physics & Astronomy,
with Prof. H. Saleur

Education

- Feb 99 **PhD**: graduated “magna cum laude” as Dr. rer. nat.
(German doctorate of natural sciences)
Thesis: “*The asymmetric XXZ-spin chain and the XX-model with boundaries*”
Advisor: Prof. V. Rittenberg
- Apr 94–Feb 99 PhD studies in Statistical Physics, University of Bonn, Germany
- Mar 94 **MS**: graduated with a Diplom (german M.S.) with grade “Sehr gut” (Excellent)
Thesis: “*Finite-size scaling in reaction-diffusion models*”
Advisor: Prof. V. Rittenberg
- Sep 91–Mar 94 Studies of physics, University of Bonn, Germany
- Sep 90–Jul 91 Studies of physics, Université Joseph Fourier, Grenoble, France
- Jul 90 **BS**: passed the Vordiplom (german B.S.) with grade “Sehr gut” (Excellent)
- Sep 88–Jul 90 Studies of physics, University of Bonn, Germany

Grants and Fellowships

Aug 23 – Feb 24	Quantum Seed Grant, Purdue College of Science, “Exploiting dissipation in open quantum systems”, joint with Q. Zhou, Y. Chen and A. Ma (Dept. of Physics & Astro.)((\$50,000)
Aug 23 – Feb 24	Quantum Seed Grant, Purdue College of Science, “Exploiting Topological Phases of Matter”, joint with R. Kaufmann, X. Cui and S. Kais (Dept. of Math. and Dept. of Chem.)((\$50,000)
Jan 20 – May 20	DURI (Discovery Park Undergraduate Research Internship) project, “Quantum Computing Algorithm for Partition Density Functional Theory”, joint with A. Wasserman, Chemistry (\$1,000)
2013 – 2020	NSF CAREER grant “Physical properties of new materials via mathematics – methods and applications” as PI (\$419,985)
2013 – 2014	Simons Fellowship in Theoretical Physics “Mathematical physics of quantum systems” (\$87,936)
2010 – 2016	NSF Research Grant “Boundary Effects in Critical Phenomena” as PI (\$267,705)
Summer 09	Purdue Research Foundation Summer Faculty Grant (\$8,000)
Apr 00 – Apr 02	Post-doctoral fellowship grant of the German National Science Foundation “Deutsche Forschungsgemeinschaft” (DFG) (\$64,000)
Jun 95 – Jul 95	Travel grant of the DAAD (German academic exchange program) for the Summer school “Processus Stochastiques”, Beg-Rohu, Quiberon (France) (\$2,000)
Feb 94	Heraeus grant for the Winter school in theoretical physics “Quantum Groups”, Karpacz (Poland) (\$500)
Sep 90 – Aug 91	Fellowship of the DAAD for studies abroad (\$5,000)

Research Awards

Oct 16	University Faculty Scholar (Purdue)
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Teaching Awards

Sep 23	Induction into the Book of Great Teachers, Purdue
May 23	Ruth and Joel Spira Teaching Award for Graduate Service Teaching, Department of Mathematics, Purdue
Mar 21	Justin Copenhaver, REU student I mentored, received a Goldwater fellowship
Apr 20	Teaching for Tomorrow Senior Mentor Award, Office of the Provost, Purdue
May 11	Teaching for Tomorrow Junior Fellow Award, Office of the Provost, Purdue
Apr 11	Ruth and Joel Spira Teaching Award, Purdue Department of Mathematics

Teaching

COURSES TAUGHT AT PURDUE

Spr 25	Quantum Mechanics II (Undergraduate course Phys 461)
Spr 23	Quantum Mechanics 1 (Graduate course Phys 660)
Spr 22	Honors Course Quantum Computing (HONR 39900) in the Honors College

Spr 20	Recording of Advanced Mathematics for Engineers and Physicists I (Graduate course MA 527)
Spr 17 & 19	Mathematical Methods Of Physics II (Undergraduate Course Phys 307)
Fall 15	Plane Analytic Geometry and Calculus (Undergrad. course MA 161 IMPACT)
Spr 15	Physical Mechanics II (Honors' course Phys 411H)
Fall 14, 16, 17, 18, 19 20, 21, 23 & 25	Advanced Mathematics for Engineers and Physicists I (Grad. course MA 527) as regular class, distance learning and Engineering Professional Education class
Spr 11, F12, Spr18, Spr 22 & F 22	Ordinary Differential Equations (Undergraduate course MA 266)
Spr 10 &11 &12 & 13	Advanced Mathematics for Engineers and Physicists II (Grad. course MA 528) as regular class, distance learning and Engineering Professional Education class
Fall 09 &11	Mathematical Methods for Physicists I (Undergraduate course Phys 29000)
Spr 09	Linear Algebra with Applications (Graduate course MA 511)
Fall 08	Advanced Mathematics for Engineers and Physicists I (Grad. course MA 527)
Spr 08	Advanced Mathematics for Engineers and Physicists II (Grad. course MA 528)
Fall 07	Ordinary Differential Equations (Undergraduate course MA 266)

COURSES TAUGHT AT UCONN

Spr 05, 06 & 07	Physics for Engineers II (Undergraduate course 152Q)
Fall 04, 05 & 06	General Physics with Calculus (Undergraduate course 131Q)

COURSES TAUGHT AT OSU

Spr 04	Mechanics and thermodynamics (Undergraduate course 2014)
Fall 03	Mechanics II (Undergraduate course 4423)

COURSES TAUGHT AT USC

Spr 02	Mechanics and thermodynamics (Undergraduate course 151)
Fall 01	Thermodynamics and statistical mechanics (Graduate course 518)

AT THE UNIVERSITY OF BONN

Apr92–Jul 97	Teaching assistant at the University of Bonn (Germany) Classes in classical mechanics, electrodynamics, quantum mechanics and thermodynamics
Oct 97–Feb 98	Supervisor for teaching assistants in thermodynamics

Students

PHD STUDENTS

- May 23 – May 26 PhD student Mohamad Mousa, Thesis: “Topological phases of matter”, advised jointly with R. Kaufmann
- Aug 15 – May 24 PhD student Jared Bland, Thesis: “Majorana quasiparticles in a few body number conserving atomic system”, advised jointly with Chris Greene (Physics department); Graduation: May 2024
- Oct 14 – curr PhD student Kevin Ralphs working on Bethe Ansatz for non-equilibrium systems
- May 09 – Dec 12 PhD student Edwin Antillon, Thesis: “Applications of Finite-size Scaling for Atomic and Non-equilibrium Systems” (joint project with Prof. S. Kais, Dept. of Chemistry, Purdue) Graduation: December 2012
Research Scientist at UES, Inc / AFRL

GRADUATE STUDENTS

- Jan 24 – May 24 Graduate students Asini Konpola (Math) and Mahmoud Moustafa (Physics) reading courses about quantum information
- June 23 – Dec 23 Graduate student Efe Gurleyen working on quantum algorithms for statistical mechanics systems (supervised research project)

REU STUDENTS

- Jan 26 – May 26 Purdue Experimental Math Lab (PXML) project:
Solving optimization problems on the D-wave quantum computer, with four undergraduate students
- May 20 – Aug 20 Undergraduate Student Justin Copenhaver continued the project described below over the summer; he won a Goldwater fellowship in March 2021 based on this work
- Jan 20 – May 20 Undergraduate Students Justin Copenhaver and Raunaq Kumaran, working on a DURIP project about quantum computing for density functional theory
- Jan 19 – May 19 Undergraduate Student and Ascarelli Fellow Kyler Overton, worked on graph Hamiltonians as an REU
- Jan 18 – Apr 18 Undergraduate Student Tibor Döme, visiting from ETH Zürich, wrote term paper “The Periodic Zero-Field Six-Vertex-Model”
- Aug 14 – May 15 Undergraduate Student Brant Coburn, worked on Hecke algebras and quantum spin chains as an REU; presented a poster at the Purdue Undergraduate Poster Symposium; was later PhD student at IUPUI
- Jan 10–May 10 Undergraduate REU student: Nolan Teasdale, worked on Monte-Carlo simulations of reaction-diffusion models

Invited Conference Talks

- Jul 26 Conference in Honor of Gunter Schütz' 65th birthday, Lisbon, Portugal
- Feb 26 Integrability Crossroads of probability and physics,
Modena, Italy; Title: "A generalized height function
for the multispecies asymmetric exclusion model"
- May 24 AMS Special session at the Spring Western sectional meeting,
San Francisco State University, CA,
Title: "Deformations, phases and local charges"
- Mar 24 APS March meeting; special session about the Gyroid,
Title: "Theoretical results for the Gyroid wire system", Minneapolis, MI
- Jun 21 Conference in honor of H. Saleur's 60th birthday, CEA Saclay, France
Title: "Theory of Materials Formed as Complements
of Triply Periodic CMC Surfaces", virtual
- Dec 20 AIM workshop "Mathematics of topological insulators", virtual
- Jan 20 AMS Joint Mathematics Meeting, Denver, CO,
Title: "Quantum Materials and Symmetries"
- Oct 18 AMS Special session at the Fall sectional meeting,
University of Michigan, Ann Arbor, MI
Title: "New results for the topology of the gyroid wire network"
- July 18 33rd Summer Conference on Topology and its Applications
Western Kentucky University, Bowling Green, KY
Title: "New results for the topology of the gyroid wire network"
- Sep 17 Workshop on Subfactors and Applications,
Vanderbilt University, Nashville, TN
Title: "Bethe Ansatz for an $SU(3)$ Hecke quotient"
- Jun 17 Collaborative Conference on Materials Research
Jeju, South Korea; Title: "Theory of Materials
Formed as Complements of Triply Periodic CMC Surfaces"
- Jun 17 XXV International Colloquium on Integrable Systems and Quantum
Symmetries, Prague, Czech Republic; Title: "Two-species asymmetric
diffusion and coupled KPZ equations"
- Oct 16 AMS Special session at the Fall sectional meeting,
University of St. Thomas, MN; Title: "Topology and Matter"

- Jun 16 Great Lakes Mathematical Physics Meeting, Michigan State University, East Lansing, MA; Title: “Two-species asymmetric exclusion process, integrability and height models”
- Mar 16 Closing Conference for the Program on Higher Structures in Geometry and Physics, Max-Planck Institute for Mathematics, Bonn, Germany
Title: “Re-gauging groupoid, non-commutative 2-cocycles and wire networks”
- Dec 15 Materials Research Society Fall Meeting, Boston, MA
Title: “Theoretical properties of materials formed as wire network graphs from triply periodic CMC surfaces, especially the Gyroid”
- Jul 14 30th International Colloquium on Group Theoretical Methods in Physics, Ghent, Belgium
Title: “Re-gauging, symmetries and degeneracies for Graph Hamiltonians”
- May 14 Workshop “Geometry, Topology, and Physics”, University of Pittsburgh, PA
Title: “Topological charges and the geometry of momentum space”
- Oct 13 11th East Coast Operator Algebras Symposium, Cincinnati, OH
Title: “ C^* geometry of wire network graphs from triply periodic CMC surfaces”
- Jun 12 Geometry of Interfaces and Capillarity, Granada, Spain
Title: “(Non)commutative geometry of wire network graphs from triply periodic CMC surfaces”
- Mar 12 Wabash Extramural Modern Analysis Seminar, Wabash College, IN
Title: “(Non)commutative geometry of wire network graphs from triply periodic surfaces”
- Oct 11 Geometry of Interfaces, Primosten, Croatia
Title: “The geometry of the double gyroid wire network: quantum and classical”
- Aug 11 Quantum Theory and Symmetries (QTS-7), Prague, Czech Republic
Title: “The geometry of the double gyroid wire network: quantum and classical”
- Dec 10 104th Statistical Mechanics Conference, Rutgers University
Title: “Critical exponents in the two-species asymmetric diffusion model”
- Jun 09 XVIII International Colloquium on Integrable Systems and Quantum Symmetries, Prague, Czech Republic
Title: “Two-species asymmetric diffusion on a ring”
- Jun 07 XVIth International Colloquium on Integrable Systems and Quantum Symmetries, Prague, Czech Republic
Title: “Integrable Systems, Symmetries and Clifford algebras”
- Jun 06 26th International Colloquium in Group Theoretical Methods in Physics, Cuny, New York, NY
Title: “Clifford representations in integrable systems”
- Mar 03 APS March meeting 2003 Austin, Texas
Title: “Non-equilibrium effects in Bose-Einstein condensates in an external periodical potential”
- Mar 94 DPG (German equivalent of the APS) conference, Hamburg (Germany)
Title: “Finite-size scaling in reaction-diffusion processes”

Other Presentations at Conferences

- Mar 03 Workshop “Functional renormalization group in quantum many-body problems”,
Max-Planck-Institut für Physik komplexer Systeme, Dresden (Germany)
Poster: “Non-equilibrium effects in the Bose-Hubbard model”
- Jul 01 Summer school “Low dimensional quantum systems. Theory and Experiment”,
ICTP Trieste (Italy)
Poster: “Bethe-Ansatz for the $su(3)$ invariant Toda theory”
- Jun 98 Conference “Dynamics of physics”, Bonn (Germany)
Poster: “The XX-chain with boundaries”
- Sep 96 Workshop “Dynamics of non-equilibrium physics”, ICTP Trieste (Italy)
Poster: “A new critical exponent for the rounding of crystal surfaces”
- Jun 94 NATO-Conference “Scale invariance, interfaces and non-equilibrium dynamics”
Newton Institute, Cambridge (England)
Poster: “Finite-size scaling in reaction-diffusion models”

Seminar Talks

- Mar 26 QM Research Seminar at the Centre for Quantum Mathematics, SDU Odense, Denmark
Title: “Using quantum annealers to calculate ground state properties of molecules”
- Mar 26 Seminar at DESY, Hamburg, Germany
Title: “Bethe-Ansatz for two species totally asymmetric diffusion”
- Apr 24 Mathematical Physics seminar, Boulder, CO
Title: “Effective geometries and their local and global invariants”
- Dec 22 Geometry Seminar, IU Bloomington
Title: “Properties of quantum graphs as complements of triply periodic CMC surfaces”
- Jan 22 Probability Seminar, Purdue
Title: “Introduction to the Bethe Ansatz”
- Apr 20 Seminar, University of Houston, TX (postponed)
- Nov 17 Colloquium, Loyola University Chicago
Title: “Geometry of the gyroid wire network”
- July 16 Seminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “Topology and Matter”
- Apr 15 Probability Seminar, Urbana-Champaign, IL
Title: “Two-species exclusion process, critical exponents and height models”
- May 14 Mathematical Physics Seminar, ETH Zürich
Title: “New results about the (non)-commutative geometry of wire network graphs
from triply periodic CMC surfaces”
- Jan 14 Seminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “New results about the (non)-commutative geometry of wire
network graphs from triply periodic CMC surfaces”
- Oct 13 Member Seminar, IAS, Princeton
Title: “(Non)commutative geometry of wire network graphs
from triply periodic CMC surfaces”
- Aug 13 Seminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “Bethe-Ansatz for the two species totally asymmetric diffusion model”

- Jul 12 Seminar at DESY, Hamburg, Germany
Title: “(Non)commutative geometry of wire network graphs from triply periodic CMC surfaces”
- Jun 12 Statistical Physics Seminar at the University of Nancy, France
Title: “Avalanches in the Raise and Peel model with a wall”
- Aug 11 Oberseminar at Max-Planck Institute for Mathematics, Bonn, Germany
Title: “The geometry of the double gyroid wire network: quantum and classical”
- May 11 QGM Seminar at Aarhus University, Denmark
Title: “The (non)-commutative geometry of the gyroid wire network”
- Nov 10 Statistical Mechanics Seminar, Princeton University
Title: “Bethe-Ansatz for the two species totally asymmetric diffusion model”
- July 10 Statistical Physics Seminar at the University of Nancy, France
Title: “Critical exponent of the two-species asymmetric diffusion model”
- Nov 09 Group Seminar Theoretical Chemistry, Purdue
Title: “Conformal Invariance”
- Apr 09 Applied Mathematics Lunch Seminar, Purdue
Title: “KPZ Surface growth, critical exponents and diffusion models”
- Apr 08 Bridge to Research Seminar, Purdue
Title: “Reaction-Diffusion Models, Hecke Algebras and Integrability”
- Feb 08 Geometric Analysis Seminar, Purdue
Title: “Bethe-Ansatz for the asymmetric XXZ quantum spin chain”
- Aug 07 Theoretical Physics Seminar, University of Würzburg, Germany,
Title: “New symmetries in the XX quantum chain with boundary terms”
- Apr 07 Condensed Matter Theory Seminar, Purdue, IN
Talk: “Quantum Spin Chains: Methods, Applications and Results”
- May 06 Particles, Astrophysics, and Nuclei Physics Seminar, UConn
Talk: “New Results for the XX-Quantum Spin Chain with Boundaries”
- Feb 04 Physics Colloquium at Oklahoma State University
Talk: “Bose-Einstein condensates in an external periodical potential-theoretical modeling and non-equilibrium generalization”
- Jun 99 Seminar talk at the Ecole Normale Supérieure, Paris (France)
Title: “L’Ansatz de Bethe pour la chaîne de spin XXZ asymétrique et la relation avec les surfaces de cristaux”
- Oct 94 Seminar talk at the Ecole Normale Supérieure, Paris (France)
Title: “Finite-size scaling dans les processus de réaction et diffusion”

Participation at Workshops, Conferences and Schools

- Nov 25 Purdue Center for Quantum Technologies Fall meeting, Indianapolis, IN
- Nov 25 Chicago Quantum Summit, Chicago, IL
- Dec 19 D-Wave Quantum Computing Training, Hanover, MD
- Mar 06 “Professional Skills Development Workshop for Women Physicists”,
Baltimore, MD, by invitation of the APS
- Oct 01 “Applications of conformal field theory”, IPAM, UCLA, Los Angeles
- Apr 00 NATO/EC-conference “New theoretical approaches to strongly correlated systems”
Newton Institute, Cambridge (England)
- Jun 95 – Jul 95 Summer school “Processus Stochastiques” Beg-Rohu , Quiberon (France)
- Feb 94 Winter school in theoretical physics “Quantum Groups”, Karpacz (Poland)

Research Stays

- May 27 Participant at KITP, Santa Barbara, CA
- July 26 – Aug 26 Visitor at the University of Bonn, Germany
- Mar 26 Visitor in the DESY theory group, Hamburg, Germany
- Jun 25 – Jul 25 Invited Researcher at IHES, Paris, France
- Jun 12 Visitor at the University of Nancy, France
- Jul 12 Visitor in the DESY theory group, Hamburg, Germany
- Jun 10 – Jul 10 Visitor at the University of Bonn, Germany
- May 08 – Jul 08 Visitor at Centre d’Énergie Atomique (CEA), Gif-sur-Yvette, France
visiting Hubert Saleur at the IPhT Laboratory.

Laboratory experience

- Oct 94 Visit at the “Laboratoire des milieux désordonnés et hétérogènes”
at the Université Paris VI (Pierre et Marie Curie, Jussieu), Paris (France)
Studies of sandpile models; Supervisor: Prof. J. Rajchenbach
- Apr 91 – Jun 91 Internship at the “Centre de Recherche des Très Basses Températures,
Centre National de Recherche Scientifique”, Grenoble (France)
Pressure measurements at low temperatures, Supervisor: Prof. H. Godfrin

Service

CONFERENCE ORGANIZATION

- May 24 Co-Organizer of an AMS special session at the Spring Western Sectional Meeting (together with S. Tsymbaliuk) about “Geometry, Integrability, Symmetry and Physics”, San Francisco, CA
- Mar 22 Co-Organizer of AMS Spring Central Sectional Meeting, Purdue (moved to virtual meeting), together with R. Kaufmann, J. Shen and B. Ulrich
- Mar 22 Co-Organizer of a special session (together with S. Tsymbaliuk) about “Integrability, Symmetry and Physics” at the same meeting
- Apr 19 Co-Organizer of the International Symposium of Quantum Science & Technology (together with a group of 9 faculty members across Purdue, lead: Y. Chen), proposal won one of the provost’s 150th anniversary 25K conference grants
- Jul 18 Organizer (together with S. Gupta, WKU and A. Saxena, Los Alamos) of an interdisciplinary conference on “Topology and its Applications” in Bowling Green, KY
- Apr 17 Organizer (together with R. Kaufmann and L. Prodan, Yeshiva University) of an AMS Special Session on “Topological Mathematical Physics” in Bloomington, IN
- Sep 96 Scientific Secretary of the conference “Advanced Quantum Field Theory” in La Londe les Maures (France)
Edition of the proceedings

SEMINAR ORGANIZATION

- Aug 16 – curr Organizer of the Mathematical Physics Seminar, Purdue (together with S. Tsymbaliuk)
- Aug 20 – May 21 Math Colloquium Chair

TEACHING INNOVATIONS

- F 20 Course Proposal for the Honors College “Quantum Computing”, ran as a 3-credit course in Sp 2022
- Spr 20 Course Development of MA 52700 as an EdX distance learning course
- F 12 & Sp 18 Course Coordinator for MA 266
- Spr 10 Course Development of MA 52800 as on-campus distance learning course
- Spr 08, F 11, F 14 & F17 Preparation and Grading of parts of the Qualifying Exam in Mathematics for Mechanical engineering PhD students, Purdue
- F 19 – curr responsible for this exam every semester, as chair of the committee

CURRICULUM DEVELOPMENT

- S 25, F 25 Part of the Associate Dean's Planning Committee for a *PhD Concentration in Quantum Information Science* in the College of Science
- S 26 Part of the Associate Dean's Planning Committee for a *Joint CoS-CoE Master's program in Quantum Information Science*

MENTORING AND ADVISING

- Aug 25 – curr Graduate student Amyneth Arceo
- Aug 24 – curr Assistant Professor Colleen Delaney
- Graduate student Brian Towne
- Aug 21 – curr Professor of Practice Kaitlyn Hood (Math)
- Aug 20 – curr Assoc. Professor Oleksander Tsymbaliuk (Math)
- Jan 24 – May 24 Mentoring Triad, Butler Center of Purdue
- Oct 23 – May 24 Part of the Speed Coaching Network, Butler Center at Purdue
- Aug 21 – May 23 Undergraduate Student Alexia Rodrigues
- Emerging Leaders Science Scholars program, Purdue
- Aug 22 – May 23 Graduate Students Ethan Kessinger and Mansimar Singh
- Jan 20 – May 20 Assistant Professor Soo Lee (Physics)
- Aug 19 – May 20 Graduate Student Shaver Phagan
- Aug 15 – Apr 17 Graduate Students Alex Porter and Vishash Bajaj
- Aug 14 – Aug 18 Post-Doc Dan Li

- current Advisory Committee Member for:
- Shi-Wen Feng (PhD Physics)
 - Varadharajan Muruganandam (PhD Physics)
 - Lauren Warshaw (PhD Physics)
 - Morris Yang (PhD ECE)
- graduated
- Mohamad Mousa (Co-Chair, PhD Physics, graduated May 2026)
 - Sachin Vaidya (PhD Physics-graduated Dec 2024)
 - Diqing Yue (PhD Mechanical Engineering)-graduated Nov 2024)
 - Amandeep Bakshi (PhD Physics-graduated Summer 2023)
 - Abraham Koshy (PhD Physics-graduated Dec 2023)
 - Xiaoting Fang (PhD Mechanical Engineering-graduated May 2023)
 - Forrest Simmons (PhD Physics-graduated May 2023)
 - Raja Selvarajan (PhD Physics-graduated Dec 2022)
 - Rishabh Khare (PhD Physics-graduated Summer 2022)
 - Dewan Woods (PhD Physics-graduated Summer 2022)
 - Yifei He (PhD Physics-graduated May 2018)
 - Changyu Huang (PhD Physics-graduated May 2018)
 - Sannah Phi Ziana (PhD Physics-graduated May 2013)
 - Liu Sheng (PhD Mechanical Engineering-graduated Oct 2011)

LEADERSHIP TRAINING

Aug 22 – May 23 Faculty Insights Forum, Office of the Provost, Purdue

COMMITTEE WORK

Department

Aug	23	– curr	Chair of the Graduate Committee, Math Dept., Purdue
Aug	19	– curr	Chair of the Advanced Services Committee, Math Dept., Purdue
Aug	24	– May 25	Steering Committee, Math Dept., Purdue
Apr	22	– May 23	Promotions Subcommittee, Math Dept., Purdue
Aug	21	– May 23	Personnel Committee (Hiring and Advising the Dept. Head), Math Dept
Aug	21	– May 22	Connections to Industry Committee, Math Dept., Purdue
Aug	21	– Apr 22	Search Committee for new faculty hire in Condensed Matter Theory, Physics & Astronomy Dept., Purdue
Aug	19	– May 20	Search Committee for cluster faculty hire in Quantum Information Theory, Purdue
Dec	19	– May 20	Search Committee for two Professor of Practice positions, Math Dept., Purdue
Feb	19	– May 20	Search Committee for new faculty hire in Experimental High Energy Particle Physics, Purdue
Aug	18	– May 19	Personnel Committee (Hiring and Advising the Dept. Head), Math Dept
Aug	16	– Mar 17	Search Committee for new faculty hire in Astrophysics, Purdue
Aug	15	– May 23	Calculus Committee, Math Dept., Purdue
Aug	14	– May 19	Advanced Services Committee, Purdue (since Aug 2019 Chair)
Aug	14	– May 15	Excellence in Teaching Award Committee, Math Dept., Purdue
Aug	12	– May 13	Calculus Committee, Math Dept., Purdue

College of Science

Aug	23	– curr	GCAP committee (Graduate Chairs of the CoS), Purdue
Oct	23	– Mar 24	Head Search Committee for Dept. Head of Statistics Dept., Purdue
Aug	20	– May 22	College of Science Area Committee, Purdue
Oct	15	– May 16	CoS Strategic Planning group “Reputational Stewardship”
Jun	11	– May 13	College of Science Elections Committee, Purdue

University

Aug	24	– curr	Graduate Council, Purdue
Aug	14	– curr	Churchill Scholarship Committee, Purdue
Aug	21	– May 24	Senate Member in the University Senate
Aug	21	– May 24	Student Affairs Committee in the University Senate
Apr	19	– May 19	Research Integrity Officer (RIO) Search committee, Purdue

REFEREEING AND REVIEWING

Feb	25	NSF panel member in Mathematical Physics
Jan	22	NSF GRFP panel
Feb	21	NSF panel member in Mathematical Physics
since	21	Reviewer for Zentralblatt MATH / zbMATH
since	18	Reviewer for the Simons Foundation
since	17	Reviewer for NSF EPSCoR Research Fellows
since	17	Reviewer for Mathematical Reviews/MathSciNet
Summer	15	external member of the search committee for a position of associate professor of Math at University of Southern Denmark, Odense, Denmark
since	12	Member of the Editorial Board of “Thermodynamics & Catalysis”
since	16	Referee for “Chemical Physics Letters”
since	10	Referee for “Journal of Statistical Physics”
since	97	Referee for “Journal of Physics A”, “Physics Letters A” and “Physical Review E”
July	04	Book review of a new undergraduate textbook by invitation of Prentice Hall

Outreach

Nov 25	Recruiting Booth at the SACNAS Conference
Nov 24	Recruiting Booth at the Field of Dreams Conference
Sep 24-May 25	Faculty Fellow for the Purdue Center for Systemic Change
Feb 24	Presentation for the WISP (Women in Science Program), Purdue
Nov 23	Presentation in the Bridge to Research Seminar, “Quantum Computing in Mathematical Physics”, Purdue
Nov 23	Presentation for the UG WISP (Undergraduate Women in Science Program), Purdue
Oct 22	Moderator of a panel about “Reading Colors: Reflections from Poetics to Science”, at the annual SLSA meeting (Society for Literature, Science and the Arts) at Purdue
Jul 20	Teacher Development Workshop for Physics teachers, supported by my NSF CAREER grant
Apr 19	Guest speaker in the physics seminar “Careers in Physics” (Phys 235)
Apr 15, 17, 18 & 22	Judge for the Undergraduate Research and Poster Symposium, Purdue
Mar 15 & 18	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
Oct 14	Presentation for the Purdue Math Club
May 14	People behind the Science Interview
Sep 12	Presentation for the “Dean’s Honors Seminar”, College of Science, Purdue
Apr 12	Judge for the Undergraduate Research and Poster Symposium, Purdue
Nov 11	Presentation for the “Association for Women in Mathematics, Purdue Student Chapter”
Nov 11, 12, 14 & 18	Guest speaker in the undergraduate course “Mathematics as a Profession and a Discipline”(MA 10800)
Apr 11	Judge for the Undergraduate Research and Poster Symposium, Purdue
Mar 11	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
Spr 10	in charge of the Women in Physics (WIP) group in the Physics Dept., Purdue
May 10	Presentation of physics experiments to first-graders, Cumberland Elementary School, West Lafayette
Apr 10	Judge for the Undergraduate Research and Poster Symposium, Purdue
Mar 10	Judge for the Lafayette Regional Science and Engineering Fair, Purdue
Feb 10	Guest speaker in the physics undergraduate seminar “Careers in Physics”
Nov 09	Presentation for the WISP (Women in Science Program), Purdue
Mar 09 since 07	Judge for the Lafayette Regional Science and Engineering Fair, Purdue Participation in Women in Mathematics, WIP (Women in Physics) and WISP (Women in Science Programs) activities, Purdue
Apr 07	Presentation for graduate students in the Math Department, Sigma Seminar, UConn
Apr 06	Presentation in Workshop “Multiply Your Options” for 8th grade girls, organized by UConn School of Engineering

Publication List

Refereed Publications

32. Ralph M. Kaufmann, Mohamad Mousa, Birgit Wehefritz-Kaufmann, *Quantum Phase diagrams and transitions for Chern topological insulators*, Annals of Physics 490 (2026), 170473
31. M. Mousa, B. Wehefritz-Kaufmann, S. Kais, S. Cui, and R. Kaufmann, *Refined phase diagram for a spin-1 system exhibiting a Haldane phase*, Phys. Rev. B 111 (2025) 085303
30. R.M. Kaufmann, D. Li and B. Wehefritz-Kaufmann, *Topological Insulators and K-Theory*, J. Math. Phys. 65 (2024) 043502
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